REGIONAL ALTERATIONS OF SYNAPTIC O-PHOSPHORYLETHANOLAMINE IN DIFFERENTIALLY HOUSED MICE[1]

Walter B. Essman

Queens College of the City University of New York

Flushing, N.Y. 11367

Received 29 October 1973

SUMMARY

In three experiments, the relationship between brain O-phosphorylethanolamine (PE) and isolation-induced behavioral effects was considered. It was observed that following eight weeks of isolation, male CF-1S strain mice showed highly significant elevations in synaptosomal PE in structures of the limbic system and in the cerebellar cortex; such changes did not occur in the cerebral cortex. Elevation of brain PE in mice by exogenous means led to profound rapid changes in the neurological status of the animal, with a subsequent behavioral status resembling that brought about by isolation housing. A PE-mediated inhibition of cerebral protein synthesis was demonstrated *in vitro* for microsomal fractions, particularly for those derived from the cerebellar cortex. The present data have been considered with a view toward introducing PE as a potential link to inhibitory changes in the central nervous system.

INTRODUCTION

A relationship between neurochemical changes and specific behaviors has been sought in several studies wherein differential housing has been the independent variable (Bennett, *et. al.*, 1964; Valzelli, 1967; Essman, 1969).

[1]This study was supported in part by a grant from the Council for Tobacco Research - U.S.A., and a grant #5-S05-FR-07064-05 from the U.S. Public Health Service.

10035408O3

Source: https://www.industrydocuments.ucsf.edu/docs/hnpl0000